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AUTHOR Ward, Margaret; Koopmans, Matthijs
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ABSTRACT

This paper explores the principal features of nonlinear dynamical systems and applies the theory to parents' acceptance of a child adopted at an older age. Although family systems theories tend to be weak in addressing family change, chaos theory and catastrophe theory allow consideration of sudden, discontinuous change. If stable, the family may withstand environmental and interaction variations without major system changes. If unstable, there may be a qualitative transformation in family interaction. Attractors are rituals, ideals, and behaviors which provide continuity and stability. Chaotic family behavior is seen in irregular movement among competing attractors without settling on one of them. Instability is present in the early stages following adoptive placement of an older child, as the family and child try to determine if the adoption is going to work. If instability reaches a threshold, the system is confronted with at least two possible steady states different from the first. There may be a sudden or gradual behavior change, or a sudden shift called a catastrophe. A catastrophe model of adoption success and failure involves the combination of unfulfilled parental expectations and the lack of a sense of parental entitlement to produce a catastrophe. If adoption is not clearly fulfilling, high entitlement levels force a choice between accepting and rejecting the child. Catastrophe theory predicts that near the threshold, a small change in fulfillment level may result in a large change in acceptance. When families are in an unstable state, they are sensitive to intervention. (Contains 22 references.) (KB)

NONLINEAR PERSPECTIVES ON FAMILY PROCESS:

CHAOS AND CATASTROPHE THEORIES

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Margaret Ward, Ph.D., CFLE

Hamilton, ON

and

Matthijs Koopmans, Ed.D.

York College

Jamaica, NY

For many years, family researchers and therapists have recognized that there are many nonlinear processes in family interaction. This recognition has provided the underpinning for various research frameworks, including the frequently used Circumplex Model (Olson, 1989). In addition, from the 1950s onward, there have been attempts to attribute symptoms of mental illness to dynamic feedback in communication among family members, especially those of mother and child (e.g., Ackerman, 1958; Bateson, Jackson, Haley, & Weakland, 1956). Dynamical properties of family interaction have also been investigated in a large number of behaviors. These include, for example, anorexia nervosa (Minuchin, Rosman, & Baker, 1978), psychosomatic complaints in children (Minuchin, Baker, Rosman, Liebman, Milman, & Todd, 1975), substance abuse in college students (Pardeck, 1991), and teenage suicidal behavior (Koopmans, 1995; Orbach, 1989).

In spite of the popularity and utility of such models, there are limitations. One of the most important arises from the principal strength of family systems thought: the recognition that feedback loops in family communication help produce stable interaction patterns. As a result, family systems theories tend to be weak in addressing family change, particularly sudden or discontinuous change. Recent developments in nonlinear dynamical systems theory, such as chaos theory and catastrophe theory, allow us to address this issue (Ward, 1995). This paper explores the principal features of nonlinear dynamical systems, especially in relation to change and applies the theory to parents' acceptance or rejection of a child adopted at an older age.

Nonlinear and chaotic processes in families: The theory

A far-from-equilibrium approach toward stability and change. Families differ greatly in their ability to manage stressors. Some appear to weather many problems without major

alterations; others are driven to profound change by apparently trivial difficulties. The degree of stability varies greatly in systems (including families), with some maintaining a steady state for prolonged periods and others showing considerable instability. The way systems respond to variations in their external and internal environment depends on how close they are to equilibrium. In systems operating in a steady state, incidental fluctuations will not materially affect their operation. If they are far from equilibrium, however, they are sensitive to fluctuations; these may reverberate through the system and produce a qualitative transformation in its operation (Prigogine & Stengers, 1984). Similarly, families in a stable mode can withstand variations in both their external environment and their internal interactions without major system changes. In families who are far from equilibrium (i.e., who are experiencing instability), those same fluctuations may produce a qualitative transformation in the way the family conducts its interactions.

Attractor dynamics in family systems. Nonlinear dynamical systems often are stable in operation; their most stable options are called "attractors" (Baron, Amazeen, & Beek, 1994). As far as families are concerned, attractors are the rituals, ideals, and prototypical behaviors which exercise a pull toward family cohesion; that is, they are orientation points for family interaction. These represent the behaviors that provide continuity and stability. Families may have more than one attractor and there may be transitions among them. For example, some families have special holiday or vacation modes of behavior which alternate with more regular workaday modes of behavior (Ward, 1995). There may also be different attractors operating in different subsystems within the family, with parents favoring one mode of interaction, for example, and adolescents another. Attractors are not static; rather they change over time. For example, a key attractor in

families is a sense of "we-ness" which represents its sense of identity as a family (Gottman, 1991). When there is the addition or loss of a member, or when a family member passes a major developmental milestone, families may need to renegotiate their "we-ness" to redefine family roles or to include or exclude a particular individual.

Chaotic attractors and chaotic behavior. Often it is impossible to predict the activity of a system from one moment to the next, even though there are relatively simple underlying principles. In stable families, there are continuous variations in interaction and in the exact manner of feedback (Young, 1995). These may, nonetheless, involve a quasiperiodicity in which behavior, though never exactly repeating, produces a discernible pattern over time (Stewart, 1989). Even when family interaction appears random, there may be a kind of order arising from underlying organizing principles that define its limits. These limits may delineate what is dubbed a strange--or chaotic--attractor (Chamberlain, 1995; Ward, 1995). Sometimes chaotic family behavior is characterized by irregular movement among competing attractors without settling on one of them (Brown, 1995; Guastello, 1995). For example, in a situation where husband and wife are business partners, they may have difficulty separating family and business roles and may oscillate irregularly between them, often with increasing misunderstandings and conflict. Instability is often present in the early stages following adoptive placement of an older child as both family and child try to determine if the adoption is going to work.

Bifurcation and catastrophe. If instability reaches a certain threshold level, then the system is confronted with two or more possible steady states different from the first; that is, there is a bifurcation with a differentiation of attractor points (Abraham, 1995; Ward, 1995). In the case of spouses who are business partners, conflict may reach such a level that they must decide

to end one or both of the marriage or partnership since the two cannot coexist. At a bifurcation point there may be a gradual or sudden shift in behavior depending on the operation of critical factors like affection, financial interdependence, or something else again. A sudden shift in behavior is referred to in chaos theory as a catastrophe (Guastello, 1995; Tesser & Achee, 1994). The term is not used, however, in its everyday sense of complete disaster. Rather, a catastrophe in the sense used in this paper involves a jump from one stable attractor to another, for example from a business-marriage partnership to only the marital partnership.

Nonlinear and chaotic process in families: The case of older-child adoption

Adoptive placement as bifurcation point. The case of older-child adoption is a particularly suitable place to explore chaos and catastrophe theories because of the inherent discontinuity of the adoption process in general and older-child adoption in particular. The primary discontinuity, of course, is the act of shifting a child from biological parents to adoptive ones, thus breaking the usual biological link between parents and child. The task for the new parents is to reconstruct their family sense of "we-ness" to include the child. The addition of any child to a family produces instability leading to a possible bifurcation between two attractors: (a) accepting the child and (b) rejecting the child. When, as in older-child adoption, this child comes with a history that includes patterns of interaction, often dysfunctional, learned in other families, the stress on the new family's favored interactional attractor can be extreme. Parents often fluctuate between accepting and rejecting the child, eventually settling on either the "we-plus-child" attractor or (less often) on the "we-minus-child" attractor (adoption disruption). From the perspective of agency personnel, many adoption disruptions (i.e., situations where the child is

removed from the home, usually at the parents' request) come as a surprise. According to one research team, "the typical family gave the agency little notice that the placement was heating up until the water was about to boil over" (Barth & Berry, 1988, p. 177). There may, of course, be a degree of denial on the part of the parents who do not want to admit that the longed-for child is not for them. There are also adoptions that succeed contrary to all predictions.

A catastrophe model of adoption success and failure. It is appropriate to examine older-child adoptive placement from a catastrophe perspective. Indeed, a number of flags signalling the presence of a catastrophe are present: two possible stable states (incorporation of the child into the family and rejection of the child), unstable states between the two stable ones, and sudden jumps in behavior (Gilmore, 1981). The dynamics are presented visually in Figure 1.

The behavior surface (upper surface in Figure 1) maps the acceptance or rejection of the new child.

Stable states. Stable State 1 represents the "we-plus-child" attractor and Stable State 2 represents the "we-minus-child" attractor. Once a family has decided that the child belongs in the family or has excluded the child, they are difficult to shift from their chosen attractor.

Factors determining the catastrophe. (1) Asymptotic factor: fulfillment of parental expectations. Unfulfilled expectations on the part of parents have been implicated by many adoption disruption studies (e.g., Barth & Berry, 1988). Although families are never totally prepared, unrealistic expectations for their new child--for example the notion that they and the child will love each other instantly--can be reduced through adequate parent preparation and matching of parents' strengths and desires with child characteristics. If a sense of fulfillment is low, there is reduced likelihood that family "we-ness" will expand to include the new child. If

fulfillment is high, parents are likely to incorporate into the family even a child others see as difficult.

Factors determining the catastrophe. (2) Bifurcation factor: entitlement. Adoptive parents operate under a role handicap because their parenthood is devalued by society (Kirk, 1984). As a result, they may fail to consider adoptive parenthood to be as good or as authentic as biological parenthood. If they are to accept the child into the family and operate effectively as parents, they must develop the sense that they are entitled to be parents to this child (Ward, 1981). A high sense of entitlement forces a choice between acceptance and rejection, usually in favor of acceptance unless there are extremely serious problems in the child-family relations like sexual molestation of another child. If there is a lack of sense of entitlement, the question of acceptance is unlikely to arise because such individuals usually do not enter the adoption process at all. If the sense of entitlement is only moderate, then the proportion of accepting responses will increase as the degree of fulfillment gets higher.

Region of instability. Between the two stable states, there is an area of unstable interaction (shaded in Figure 1). When there is a moderate sense of entitlement or urgency to include the child, the question of acceptance or nonacceptance (two attractors) becomes relevant. In cases where adoption is not clearly fulfilling or unfulfilling (a common situation in older-child placement), high levels of entitlement on the part of the parents "force" a choice between accepting and not accepting the newly placed child. In this situation, ambivalence is common. Like other far-from-equilibrium systems, families in the zone of instability are susceptible to the effects of relatively minor fluctuations in the environment and in family interactions.

Sudden jumps in behavior. Abrupt changes in behavior are evident when a family

changes rapidly from nonaccepting to accepting or vice versa. Adoption disruption research has noted a threshold effect in many disruptions, where some critical event sets off a demand that the child be moved from the home (Barth & Berry, 1988). Catastrophe theory would predict that, near the threshold point, a small change in how fulfilling the adoption is may result in a large change in the proportion of accepting responses at high levels of entitlement.

A model for intervention. When families are in an unstable state (i.e., when they fluctuate between acceptance and rejection), they become sensitive to external and internal influences, with the result that major changes can occur as a result of minor fluctuations. In this stage, even a small intervention (or the lack of one) may be crucial in moving the family onto one attractor or the other (Figure 2). The chance remark of a friend or family member at a critical moment, for example, may make the difference between continued efforts to make the placement work or giving up on the adoption. Similarly, the appropriate intervention by an adoption agency worker or other support person can be crucial in adoption success (Barth & Berry, 1988). Thus, if agencies are committed to making older-child adoption work, personnel must be proactive in maintaining frequent contact with the family both early in the placement as well as at other times of instability in the adoption, so that any intervention can be both appropriate and timely. Part of this support and intervention can, of course, be undertaken by other individuals, such as therapists, a buddy support family, or an adoptive parents' group. What is important is that any intervention be appropriate and timely. Once a pattern is set (i.e., when the family has moved onto an acceptance or rejection attractor), then only a major effort will effect a change in the family's attitude toward the child, if change occurs at all.

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Figure 1

OLDER-CHILD ADOPTION: INCORPORATION OR REJECTION OF NEW CHILD

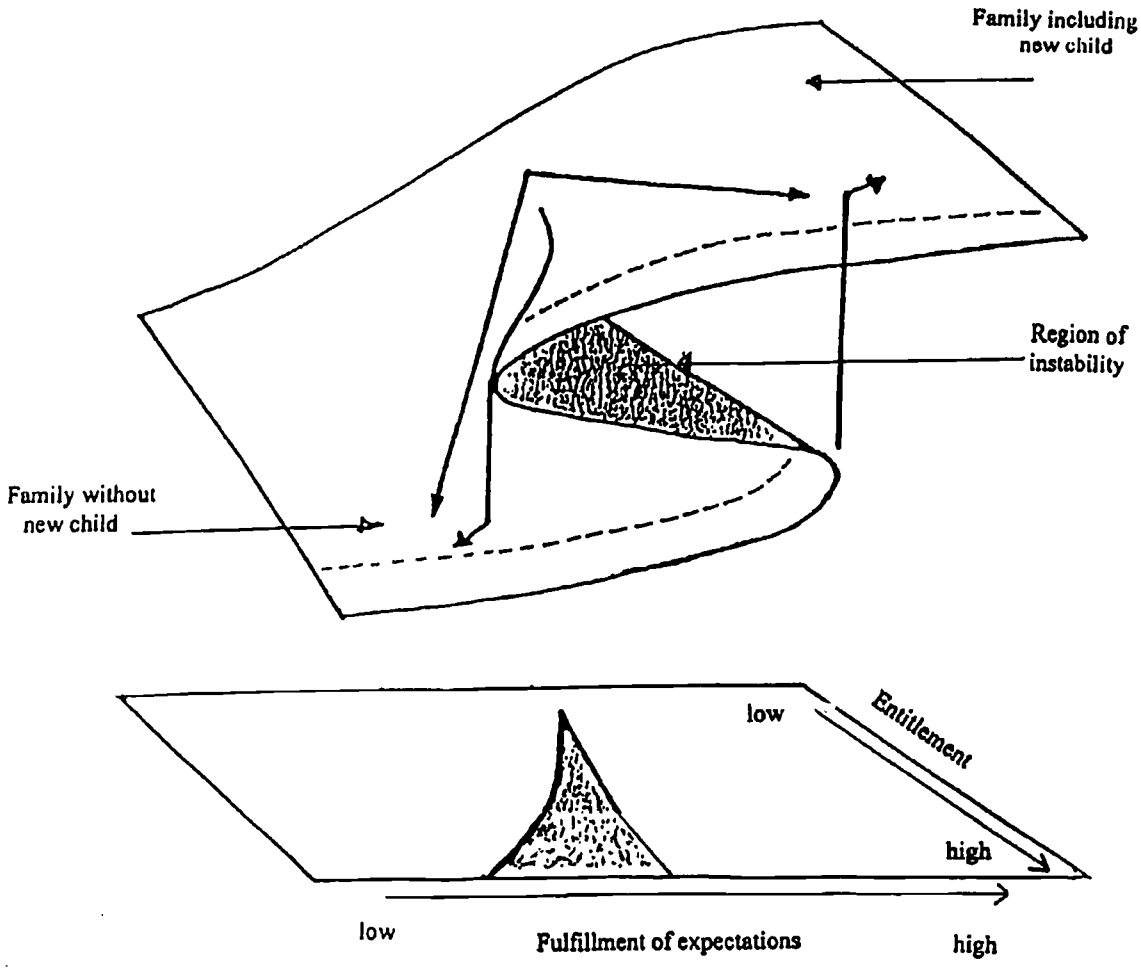
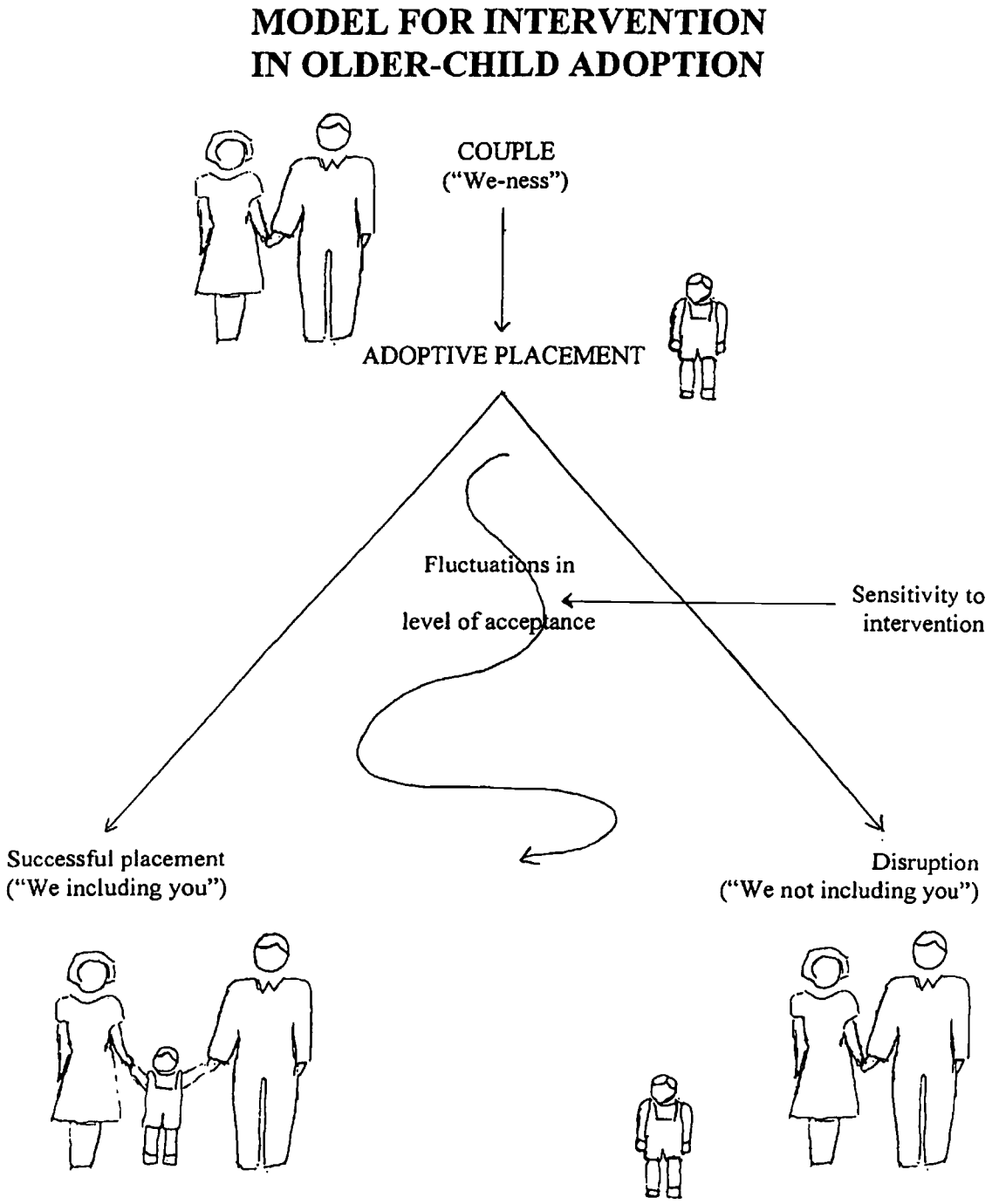


Figure 2



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Organization/Address: 6161 E. GRANT RD, #21208
TUCSON, AZ 85712

Telephone: 905-721-5898

FAX: 905-721-8018

E-Mail Address: mjward@dakotacom.net

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